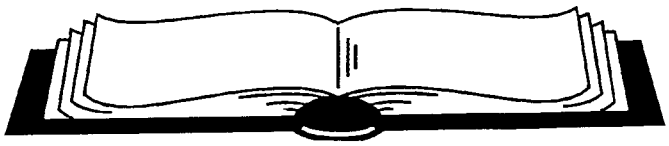
Code # 27
(office use only)

NEW JERSEY

2000-2001 Guidelines and Application



BEST PRACTICES

Deadline for Application to County Office: NOVEMBER 27, 2000

The Best Practices application is a public document. The information that you provide will serve as the official record. Review the application prior to submission to ensure accuracy and adherence to the guidelines. Type or keyboard information requested on this page and page 2, if applicable.

Category Science (Application is limited to one category. See page 3 for details.)
Practice Name Sounds Like Music
Number of Schools with Practice 1 (If more than one school or district, read and complete information on page 2.)

County	Hunterdon
District (Proper Name)	East Amwell Township School District
Address	43 Wertsville Road, Box A
	Street/P. O. Box
	Ringoes 08551
	City Zip Code
Telephone	908-782-6464 Fax 908-782-1298 Email
School Administrator	Edward Stoloski estoloski@eastamwell.org Chief
Nominated School #1 (Proper Name)	East Amwell Township School
Address	43 Wertsville Road, Box A
	Street/P. O. Box
	Ringoes 08551
	City Zip Code
Telephone	908-782-6464 Fax 908-782-1298 Email
Principal	Samuel Mendelson smendelson@eastamwell.org
Program Developer(s)	Teresa Stores, Skip Woolston
Application Prepared By	Teresa Stores, Skip Woolston
Chief School Administrator's or Charter School Lead Person's Signature	Edward F Sto

FOR USE BY COUNTY SUPERINTENDENT OF SCHOOLS ONLY

Approved: ✓ Yes ___ No **County Superintendent's Signature** Jennie J Cot

NEW JERSEY STATE DEPARTMENT OF EDUCATION

Code # _____
(for office use only)

NEW JERSEY

BEST PRACTICES
2000-2001 APPLICATION

Application Requirements: Failure to comply with the procedures for submission of the application will result in the elimination of the application.

1. **RESPONSES to the information and the statements below must be ANONYMOUS and ACCURATE.** No reference should be made to the names of the district, the school(s) or community. Use the words "the school" or "the schools" in referring to the applicant in responding to the statements
2. **USE ONLY THE SPACE PROVIDED ON THE APPLICATION FORM on pages 1, 2 (if applicable), and 4.** Do not include any additional materials, as they will not be reviewed in the selection process.
3. Application must be **keyboarded on 8 ½" x 11" white paper, portrait** format. **Twelve-point or larger computer font** or **fourteen-pitch or larger typewritten font** must be used. (This sentence is in twelve-point Times New Roman.)
4. **KEYBOARDED RESPONSES** to all the statements below must be **no more than a total of four pages. Keyboard and number the statement followed by the response.** Format your response for accuracy and clarity.
5. **The information on page 4 and the responses** to statements must be copied **on one side of the page**. **The information on pages 1 and 2 (if applicable)** must be copied **on one side of the page**. Staple pages 1, 2 (if applicable), 4, and the keyboarded responses together, in that same order.
6. **The original application must be signed by the district chief school administrator or charter school lead person, indicating his/her approval.**
7. **The original and seven copies of the application** must be submitted to the county superintendent of schools by **November 27, 2000**, with the **Itemized List of District Applications** form. Keep the seven copies of each application together with the original containing the signature of the district chief school administrator or charter school lead person on the top of each set.

The following data is required to assist the panelists in the evaluation of the application:

Type of School / **Grade Levels**

- X Elementary School — K-8
- X Middle School
- ___ Junior High School
- ___ High School
- ___ Other: _____

Practice Name Sounds Like Music

Number of Schools with Practice _____

Number of Districts with Practice _____

Location __ Urban/City __ Suburban With Urban Charcteristics
__ Suburban __ Small City/Town X Rural

Check the ONE CATEGORY into which the practice best fits.

- ___ Arts (Visual and Performing Arts)
- ___ Assessment/Evaluation
- ___ Bilingual Education and Diversity
- ___ Citizenship/Character Education
- ___ Early Childhood Education Programs
- ___ Educational Support/Guidance and Counseling Programs
- ___ Educational Technology
- ___ Gifted and Talented Programs
- ___ Health and Physical Education
- ___ Language Arts Literacy
- ___ Mathematics
- ___ Professional Development
- ___ Public Engagement (family involvement and partnerships with business, community, school districts, and/or higher education)
- ___ Safe Learning Environment
- ___ School-to-Careers/Workplace Readiness
- X Science
- ___ Social Studies
- ___ Special Education
- ___ World Languages

1. Describe the practice proposed for recognition, and list its objectives. Detail how the practice is innovative and how it promotes high student achievement.

2. List the specific *Core Curriculum Content Standards, including the Cross-Content Workplace Readiness Standards,** addressed by the practice and describe how the practice addresses those standard(s). Provide an example to substantiate your response.

3. Describe the educational needs of students that the practice addresses. Document the assessment measures used to determine the extent to which the objectives of the practice have been met. Provide assessments and data to show how the practice met these needs.

4. Describe how you would replicate the practice in another school and/or district.

*The 1996 edition of the ***Core Curriculum Content Standards*** published by the New Jersey State Department of Education was disseminated to all districts and charter schools and is available on line through the department's web site at http://www.state.nj.us/education.

Sounds Like Music

1. **Describe the practice proposed for recognition, and list its objectives. Detail how the practice is innovative and how it promotes high student achievement.**

This unit is taught to fifth grade students during their regular science class after they have studied and completed lab work on energy, primarily wave energy. The science and instrumental music teacher teach this unit collaboratively. The students build a musical instrument that demonstrates the key concepts of pitch, vibration, resonance, and quality. (For example, during the 1999-2000 school, the students built panpipes.) The students will use sound technology (oscilloscope and digital chromatic tuner) to further develop and enhance their knowledge of sound.

Instruments from different cultures are shared with the class while exploring how to produce sounds and change pitch. From here the music teacher introduces the instrument to be built.

Objectives:
Students will be able to:
1. Apply knowledge of wave theory.
2. Discuss the key concepts for sound such as pitch, tone quality, resonance, and vibration.
3. Demonstrate skills and understanding of sound concepts through building a musical instrument.
4. Demonstrate an appreciation of the relationship between science, and music various cultures.
5. Explore instruments of various cultures.
6. Use and develop an understanding of scientific equipment and it's application to science and music.

This unit is innovative in that children are involved in a science setting and are making connections to the Arts. We bring the Arts into the standard classroom curriculum. By applying their knowledge of scientific principles, children discover through a hands on activity that there is an important relationship between science and music. Through this practice the children assume the roles of scientist, instrument designer, and finally musician. They perform musical selections with their instruments for their second grade buddies.
This activity promotes high student achievement for every student. Using higher level thinking skills the students apply their science knowledge (application) and create a musical instrument (synthesis). The successful result creates a high motivation to share their work with other students.

2. List the specific *Core Curriculum Content Standards, including the Cross-Content Workplace Readiness Standards,* addressed by the practice and describe how the practice addresses those standard(s). Provide an example to substantiate your response.

New Jersey Core Curriculum Standards:
Music:
Standard 1.2 All students will refine perceptual, physical, and technical skills through creating dance, music, and or visual arts.
--Students create and refine a musical instrument and perform songs on the instrument at the completion of the activity.

Standard 1.5 All students will identify the various historical, social and cultural influences and traditions which have generated artistic accomplishments throughout the ages, and which continue to shape contemporary arts.
--Students identify and use instruments from various cultures. They explore each instrument and how to produce different sounds through vibrations.

Standard 1.6 All students will develop design skills for planning the form and function of space, structure, objects, sound, and events.
--During the building phase of the activity the students discover how to make design adjustments in order to find the correct pitch for the individual tubes of the panpipe.

Science:

Standard 5.1 All students will learn to identify systems of interacting components and understand how their interactions combine to produce the overall behavior of the system.
--Students will recognize that when the panpipe is assembled it functions as a working music instrument.

Standard 5.2 All students will develop problem-solving, decision-making, and inquiry skills, reflected by formulating useable questions and hypotheses, planning experiments, and conducting systematic observations, interpreting and analyzing data, drawing conclusions and communicating results.
--Students formulate questions about how they can achieve high and low pitches on the panpipe. They formulate a hypothesis and then work on the panpipe to achieve the desired pitch and tone quality for each tube. They learn the concepts of sounds by making and adjusting sounds, they learn science by doing science.

Standard 5.3 All students will integrate mathematics as a tool for problem solving in science, and as a means of expressing and/or modeling scientific theories.
--Students will design a graph that illustrates the relationship between pitch and length of tube.

Cross Content Workplace Readiness Standards

Standard 2 All students will use information, technology, and other tools
2.7 Use technology and other tools to solve problems, collect data, and make decisions.
--When the students are building the panpipes they use the digital chromatic tuner to determine the correct pitch for the individual tube. They make adjustments by observing the information on the tuner which tells them whether the pitch is high(sharp), low(flat), or correct. The students must also determine if they are placing the tubes in the correct order in order to achieve the scale-like progression required.
--Students use the oscilloscope to explore and observe the wave forms of instruments from other cultures and Western culture. Students in class that play band or orchestral instruments play their instruments so the class can observe the difference in wave forms for woodwind, brass, string, or percussion instruments. Students that do not play an instrument are encouraged to play one of the instruments from another culture. Students make observations regarding short and sustained tones.

3. Describe the educational needs of students that the practice addresses. Document the assessment measures used to determine the extent to which the objectives of the practice have been met. Provide assessments and data to show how the practice met these needs.

Students need to explore and understand wave energy. In order to achieve this music becomes an integral part of the learning. Music puts sound theory into an experiential form, all children can relate to this. Regardless of musical talent or academic ability, all students can design and make a musical instrument that they can play.

This activity can be assessed by the science teacher using the objectives of the process. The activity can or will be assessed by:
--Students will compare their predictions with their observations and their final conclusions.
--Student performances for fellow students. Examples of this would be performances for younger students, music class, or as part of an elementary school concert.
--Students graphing results as a related activity in math class.
--Feedback from the audience.

4. Describe how you would replicate the practice in another school and/or district.

This project can replicated in other schools either in the science, music or in the student's regular classroom. This activity can be successfully completed in five 40-minute periods. To replicate this project the teacher(s) would need to:
--select an instrument to be built that can be completed by all students.
--have students experience instruments through using video or preferably actual instruments.
--have the students experiment with pitch using a tuner, pitch pipe, or keyboard and construct the instrument and use a medium for tuning.
--have the students perform songs playable by all class participants.